NJ HMFA Green Homes Office

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RE: Green General Measures

At the New Jersey Housing and Mortgage Finance Agency we are striving to meet state production goals of affordable, special needs, and environmentally friendly housing. Building on current affordable housing and special needs programs we have either added green building guidelines and/or requirements to existing programs or created new, complimentary green programs.

For those projects that are not going to or are unable to participate in a specific green program – this document gives a few general measures that are recommended to property managers. These measures are notable for their ease of installation, perceivable quality of life improvements, energy savings, or quick return on investment.

It is recommended that you hire an architect, engineer, and/or design professional – preferably familiar with green building practices - to advise you on materials and minimum code requirements. Please feel free to contact the NJ HMFA Green Homes Office with questions.

When looking at a building for energy efficiency improvements, we recommend a staged process including Building Review, First Steps, and Supplemental Savings. Each step provides the groundwork for the next. For example, if you purchase a new EnergyStar boiler before reducing the building's overall heating load you do not achieve as much as if you waited and then purchased perhaps a smaller, more efficient new EnergyStar boiler – which would cost less and save you money from the beginning.

Note: Test, Adjust, and Balance (TAB) after each of the steps. Allow for some time between stages to calibrate new equipment, check for tenant satisfaction, and measure energy usage via the next energy bill(s).

I. Building Review and Energy Benchmarking:

1. Benchmark existing energy usage. Track usage through the months for two years via past utility bills. If the records have been misplaced, the utility company will typically provide two years of history free of charge.
2. Go through the entire building and note problem areas, equipment that does not work, leaks, tenant complaints, and future capital improvements, etc.

II. First Steps:

1. Clean all lighting fixtures and replace if necessary with fixed EnergyStar fluorescent lighting fixtures – it is possible to install fixtures that prevent easy bulb removal or require a Compact Fluorescent bulb.
2. Replace all incandescent bulbs with EnergyStar Compact Fluorescent screw-in bulbs.
3. Calibrate existing occupancy sensors and Fluorescent fixtures or install new ones – 1) ensure that the light delay is long enough for a resident to get into their apartment with groceries and 2) that when lights controlled by the occupancy sensor are off, minimum light levels are met.

4. Replace existing Emergency signage with LED emergency signage.
5. Check exterior lights and reduce number if too bright and/or replace with Energy Efficient versions.
6. In the project office, make sure to turn off all equipment completely when not in use. This means completely unplugging the equipment or putting them on power strips, which can be switched off. Educate tenants of the same.
7. Ensure that exterior entry doors close automatically and are not propped open. Also check emergency exits and reset all alarms.
8. Install weather stripping as needed around doors, windows, opening framing. The rubber stripping that screw into the bottom of doors is best for that application - unless adequate ventilation or A/C return air is based entirely on under-door airflows. Completely seal each apartment and eliminate drafts.
9. Install low-flow showerheads, toilets, and sink aerators. Note: contact HMFA Green Homes Office for study of low-flow toilets to ensure a product that works best (reduce repeat flushes).
10. Clean vents, filters and around fan rooms – this reduces friction and lessens loads on fans and compressors.
11. Make sure that dampers, fans, and valves work and that hoses and pipes aren't pinched or leaking. If the DHW or Heating piping and equipment needs replacement, wait to install new pipes until the entire heating and water system has been resized – after following the energy saving measures in the next stage.
12. Recalibrate or install programmable thermostats after instituting above measures. Due to reduced leakage (#8), better airflow (#11), and less heat from lighting (#1-5) – reduced use of central air will save energy. Test, Adjust and Balance the thermostats to ensure that resident operational needs are met.
13. Check that ventilation is adequate and meets codes, standards and best practice measures. Repair or Replace fans and/or motors as necessary.

III. Supplemental Load Reductions:

1. Install new or correct insulation in walls, basement ceilings and attic spaces.
2. Install new low-e windows.
3. Install vapor-barriers and insulation in underground crawlspaces, if applicable. This will reduce heating/cooling losses from piping and prevent moisture from gathering on piping insulation.
4. Provide exterior window shading for hot windows in an architecturally sensitive manner – usually the south and west sides of the building.
5. Consider new EnergyStar appliances for equipment over 8 years old – microwaves, ovens, refrigerators, etc.
6. Consider solar tubes to bring daylight into interior spaces and reduce need for lighting during the day. Light-pipes rely on mirrors and tubing to reflect light into the building and can be quite flexible. This would go well with light sensing dimmable ballasts in T-8 fluorescent fixtures.
7. Provide or repair thermal sensors on elevator and airshaft fans and vents – to provide automatic control of ventilated air and fire emergencies. This measure will work to keep necessary heat from escaping in the winter and can work well to cool common halls and stairwells with night-flushing in the summer, spring, or fall.
8. Install Energy Star ceiling fans in units.